

Amendments to the Specification:

Please replace the paragraph beginning on page 18, line 26 with the following amended paragraph:

The central processing unit 41 comprises a basic-information processing section 411, a transmission-quality-evaluation processing section 412, and a receiving-environment processing section 413. The central processing unit 41 is operated according to a control program as described later. The basic-information processing section 411, the transmission-quality- evaluation processing section 412 and the receiving-environment processing section 413 are equivalent, respectively, to the basic-information processing section 211, the transmission- quality-evaluation processing section 212 and the receiving-environment processing section 213 in the central processing unit 21 of the relay ~~central~~ station 12, and their description will be omitted.

Please replace the paragraph beginning on page 20, line 4 with the following amended paragraph:

The basic information in this embodiment consists of a device type, a MAC address, the setting status of a path relative to the parent station 11 (hereinafter referred to as "path-setting status"), and a network ID. The device type means either one of the parent station 11, the relay station 12 and the child station 13. For example, in the basis-information notification signal, "BST", "RPT" and "RMT" are used as identifiers indicative of the parent station 11, the relay station 12 and the child station 13, respectively. The path-setting status means either one of "non-completion of path setting", "completion of temporary-path setting" and "completion of fixed-path setting". This path-setting status is selectively determined by referring to the path discrimination flag in the path storage section 223 ~~323~~. For example, in the basis-information notification signal, "PERM", "TEMP" and "VAC" are used as identifiers indicative of the "completion of fixed-path setting", the "completion of temporary-path setting" and the "non-completion of path setting", respectively. The basic-information processing section 211 refers to the respective stored contents of the MAC-address storage section 221 ~~244~~, the ID storage section 222 and the path storage section 223 ~~323~~ to generate the basic-information notification signal. The device type may be written directly in the control program itself for the relay station 12. Alternatively, the storage unit 22 may be provided with a type storage section for storing the device type.

Please replace the paragraph beginning on page 21, line 15 with the following amended paragraph:

Then, the basic-information processing section 311 ~~244~~ of the parent station 11 discontinues (waits) the processing for a given time period while standing ready to have a notification of completion of transmitting the fixed-path notification signal (S17), and determines whether the completion of transmitting the fixed-path notification signal is notified (S18). As the result of the determination, when the completion of the transmission is notified (YES), the basic-information processing section 311 of the parent station 11 completes the processing. When the completion of the transmission is not notified (NO), the basic-information processing section 311 of the parent station 11 returns the processing to S16.

Please replace the paragraph beginning on page 22, line 4 with the following amended paragraph:

As the result of the determination, when the respective network IDs are not identical to one another (NO), the receiving-environment processing section 213 of the relay station 12 annuls the received basic-information notification signal (S31), and returns the processing to S21. That is, the receiving-environment processing section 213 of the relay station 12 returns to the state of standing ready to receive a basic-information notification signal. The power-line communication modem section 23 may be configured to perform the processing at S22. In this case, the power-line communication modem section 23 may be configured such that it can annul a basic-information notification signal received thereat. As the result of the determination, when the respective network IDs are identical to one another (YES), the transmission-quality-evaluation processing section 212 acquires a receiving intensity of the received basic-information notification signal from the power-line communication modem 23 to calculate a transmission quality, and notifies the calculation result to the receiving-environment processing section 213. Then, the receiving-environment processing section 213 of the relay station 12 creates or updates a receiving-environment table in accordance with the basic information contained in the received basic-information notification signal and the transmission quality from the transmission-quality-evaluation processing section 212 ~~213~~ (S23). In this way, the transmission quality can be correlated to the basic information, particularly the MAC address and the path-setting status, to recognize the

transmission quality of the transmission line 14 between its own station and the station having the MAC address, and recognize whether communications with the parent station 11 can be performed through the use of the transmission line 14 between its own station and the station having the MAC address. The MAC address serves as not only a data-link-layer address but also an identifier identifying each of the stations.

Please replace the paragraph beginning on page 25, line 21 with the following amended paragraph:

Then, the central processing unit 21 ~~34~~ of the target relay station 12 which has received the temporary-path notification signal instructs the path storage section 213 to store therein the temporary path contained in the received temporary-path notification signal, and changes the path discrimination flag from "00" to "01".

Please replace the paragraph beginning on page 29, line 26 with the following amended paragraph:

When the timer in the processing at S24 in FIG. 7 times out, the relay station c 12c has a record where "TEMP" is registered in the field of path-setting status, as shown in FIG. 12. Thus, in the processing of FIG. 7, S25 advances to S26 in which the relay station c 12-c transmits the receiving-environment table to another relay station 12 which has transmitted a basic-information notification signal containing "TEMP". In this operation, if a plurality (two in this example) of records where "TEMP" is registered in the field of path-setting status exist as shown in FIG. 12, the receiving-environment table may be transmitted through any one of such relay stations 12. However, in view of reliable transmission to the parent station 11, it is desirable to compare between respective PLR values of the records, and select the relay station 12 having a record with a higher PLR value. In the example as shown in FIG. 12, the relay station c 12-c compares a record having a PLR value of 6 with a record having PLR value of 9, and transmits a receiving-environment table ~~communication signal~~ to the relay station a 12-a interconnecting with the transmission line 14 having a PLR value of 9.

Please replace the paragraph beginning on page 34, line 1 with the following amended paragraph:

Then, the receiving-environment processing section 412 ~~413~~ of the child station 13 determines whether a timer has timed out (S75). For example, the timer is configured to be set at "0 (zero)" in conjunction with the activation of the child station 13. As the result of the determination, when the timer has not timed out (NO), the receiving-environment processing section 413 of the child station 13 returns the processing to S72. As the result of the determination, when the timer has timed out (YES), the receiving-environment processing section 413 of the child station 13 compares between PLR values in the receiving-environment table to retrieve the relay station having a maximum PLR value, and transmits a communication signal (receiving-environment/basic-information notification signal) containing the receiving- environment table and the basic information of the child station 13 to the retrieved relay station 12, by means of a unicast (S76). Then, the child station 13 stands ready to receive a fixed-path notification signal (S77).

Please replace the paragraph beginning on page 35, line 27 with the following amended paragraph:

FIG. 16 is a flowchart showing an operation in a case where a relay station 12 is added to the network. A user of a relay station 12 sets a network ID, and connects the relay station 12, for example, to a distribution line through a plug. For example, the network ID is notified from an administrator of the network 10 by mail, facsimile or telephone. Alternatively, the network administrator of the network 10 may set a network ID to the relay station 12 ~~child station 13~~, and then give it to the user. In FIG. 16, the basic-information processing section 211 of the relay station (additional relay station) 12 generates a basic-information notification signal in response to the connection to the network, and transmits it by means of a broadcast using a CSMA/CA protocol (S91). Then, the basic-information processing section 211 stands ready to receive a basic-information notification signal returned from the surrounding relay stations 12 (S92).

Please replace the paragraph beginning on page 34, line 1 with the following amended paragraph:

Then, the receiving-environment processing section 212 ~~213~~ of the additional relay station 12 determines whether a timer has timed out (S95). For example, the timer is configured to be set at "0 (zero)" in conjunction with the activation of the additional relay station 12. As the result of the determination, when the timer has not timed out (NO), the receiving-environment processing section 213 of the additional relay station 12 returns the processing to S92. As the result of the determination, when the timer has timed out (YES), the receiving-environment processing section 213 of the additional relay station 12 compares between PLR values in the receiving-environment table to retrieve the parent or relay station 11, 12 having a maximum PLR value, and transmits a communication signal (receiving-environment/basic-information notification signal) containing the receiving-environment table and the basic information of the additional relay station 12 to the parent station 11 or the surrounding relay station 12, by means of a unicast (S96). Then, the additional relay station 12 stands ready to receive a fixed-path notification signal (S97). A setting method for a timeout period of a timer and a selection method in a case where a plurality of relay stations 12 have a maximum PLR value, are the same as those in the operation in the case of adding the child station 13.